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WHOLE NO. 797

RICHMOND, VA., NOVEMBER, 1918

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CHARLES M. EDWARDS, M. D., Managing Editor
Richmond, Va.

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Original Communications.

SURGICAL REPORT OF THE AMERICAN RED CROSS COMMISSION TO ROUMANIA.

By ROBERT C. BRYAN, Major M. R. C., Richmond, Va.

Our Commission arrived in Jassy, Roumania, Sunday, September 16th, 1917, and was billeted that day to various private residences. No desirable headquarters being procurable, the courtesies of the American Legation were tendered to us by the Minister, Mr. Charles J. Vopicka.

September 17th. Dr. Catacuzene, medical chief of the Roumanian Red Cross, invited the Commision in audience, he emphasizing the dire straits and urgency of immediate assistance, stating that:

1st. The *hospital supplies,* bed covers, blankets, ticking, pillow slips, linen, pajamas and drugs of all kinds were practically exhausted.

2nd. The *surgical equipment* had been used up, sterilizers, vaporizers, tubes, drains, sprays, instruments, catgut and rubber gloves.

3rd. The *hospital utensils*, plates, knives, forks, and kitchen utensils could not be gotten.

4th. There was an *imminent danger of famine* demanding imperatively canned stuff, vegetables, meats, milk, fat, butter, oleomargarine, cocoa.

5th. The Roumanian Government was now taking care of 60,000 beds, but with the advent of cold weather, owing to typhus, recurrent fever, scorbutus and jaundice, double that number of beds would be required.

6th. The civilian population was in a complete state of demoralization, and had no clothes, no thread, needles or buttons, and no food.

7th. There was an insufficient number of doctors. At the outbreak of the war there were altogether about 2,000 Roumanian doctors; of this number 200 had died of typhus fever, 300 had been taken prisoners, there were some in the conquered land, so that about 1,200 only were left who were doing the military and civil practice. In addition to the Roumanian physicians, 75 French were doing work at the front in their own hospitals. It may be instanced here that:

In the United States Army 7 surgeons are allotted to every 1,000 men.

In Germany 4 surgeons to every 1,000 men.

In Roumania there is 1 surgeon to every 1,000 men.

There is not a very pleasant relationship existing between the French and Roumanian surgeons, neither group receiving instructions from the other, so that in many hospitals where these two schools are thrown together the wards are divided. The French equipment is superior, in many excellent, in one (the French Hospital, Jassy), money is given to the patients when they leave and efforts made to provide them with artificial limbs.

September 18th. Audience with Dr. Constantinescu, Minister of the Interior. Dr. Constantinescu stated

1st. That the whole question was one of *food* for the Roumanian Army; that 500,000 Russian soldiers are daily eating the Roumanian food at a rate of 2,000 car loads of wheat a month, and that in 3 months the entire food supply will be exhausted. For this food the Russians are not paying.

2nd. That Moldavia (that part left of Roumania) is not as rich in farm lands as is Wal-

lachia and Dobrugia, those parts conquered by the Central Powers, and that with the Roumanian and Russian Armies to be fed, besides the normal civil population, the refugees and consequent congestion, Moldavia cannot support this population later than January 1st, 1918. The Government has requested all the more prosperous citizens to leave Jassy so as to facilitate as much as possible the food and fuel problem.

September 19th. Audience with Mr. Bals, President of the Roumanian Red Cross, who presents a list of

1st. *Urgent*,

2nd. *Delayed*, necessities for his organization. Dr. Peabody and myself were asked by the Chairman to take over the medical and surgical aspect of Roumania, to study the same and report our conclusions at a later meeting.

September 22nd. With Dr. Slatinaneau, of the Roumanian Red Cross, who had been delegated by Dr. Catacuzene, we visited Barlad, inspecting thoroughly 5 hospitals with capacities ranging from 200 to 800 beds. In the succeeding ten days we visited at the following centres:

Jassy	6
Barlad	5
Roman	1
Bacau	7
Saskut	1
Cotzfenesti	1
Rocaciune	1
Cauitzi	1
Onesti	1
Pietra	5
Odessa	3
	22

From a study of the above mentioned hospitals, their surgical personnel, equipment and food, and the establishment of the conditions leading up to the present critical state of affairs, it may be well to mention that Roumania declared war against Austro-Hungary, August 27th, 1916. By November 15th, Bucharest had been lost; since January 1st, 1917 the front extends along a line about 10 kilometers to the west of Galatz, to the northwest through Tecucci, Adjuid, Onesti, to the Carpathian Mountains, the Russians holding the lower part of this line along the delta of the Danube and Black Sea, as well as the upper part in Galicia, the Roumanians supporting the central zone with their army of 200,000, which has been reduced from a strength of 600,000. Three-fifths of Roumania has been lost and the remaining two-fifths, Moldavia, represents its unproductive fields and impecunious people. The normal population of Moldavia is estimated at 2,800,000, the present estimate is 3,500,000 of which 500,000 are refugees from Wallachia and Dobrugia. There are 60,000 beds for the care of the wounded and sick, 1 bed to every 4 soldiers. 15,000 extra beds are provided for the civil population. Some of the larger centres are:

Jassy	7,852
Barlad	2,108
Bacau	1,635
Tecucci	682
Galatz	2,162
Roman	1,930
Pietra	1,740
Husi	1,697
Vaslui	1,701
Botosani	830

The remainder of the beds are found in school buildings, private residences, hotels, theatres, warehouses, administrative buildings and barracks, all of which have been hurriedly converted or constructed for the reception of the Roumanian soldiers.

The three methods of maintaining the wounded are by, 1st. Red Cross; 2nd. Army; 3rd. Regina Maria.

I. *The Red Cross Hospitals* are the best appointed, have the best buildings (usually a well ventilated and spacious school) uniformly the best equipment, not over 500 beds, and offer a higher standard of surgical care and food than was noticed in the other group of hospitals. The terazzo floors of practically all this type of buildings are washed down daily with kerosene oil. The beds are usually the metal or the military bed, straw or felt mattress, and equipped with a pillow, two sheets and blanket. This superiority may be explained by:

1st. The Red Cross is an old and established institution in Roumania.

2nd. There are said to be 10,000 Red Cross nurses in Roumania who give their time and assistance to this organization.

3rd. Private subscriptions are solicited and given freely.

4th. The more prominent surgeons of Roumania are associated with this group of hospitals.

II. *The Army.* These hospitals represent the improvised barracks connected by covered walks, built along the unit plan, they are newly constructed, plank partitions, between which sand is piled, heated by large stoves, occasionally half-dugouts, windows, wooden beds, straw mattresses, one sheet, two blankets, wards more crowded than would be found under normal conditions. These hospitals are found at selected junctions and accessible railway points, up to 2,000 beds, and are, therefore, apt to be more remote from the towns and cities and, consequently, do not have the collaboration of female assistance.

III. *Regina Maria.* This group of hospitals was inagurated by Her Majesty, the Queen of Roumania, and they are found usually in the smaller villages and towns. We were told that there was a deficit of one million Lei at the present time for which Her Majesty holds herself responsible.

1. *The Average Hospital*, selected from any one of the preceding groups, presents the following features in common:

A. All patients, on admittance, are bathed, scrubbed, shaved, washed with kerosene, provided with clean pajamas (or nightshirts) and socks and put to bed.

B. The uniform and all clothes are disinfected by dry heat, the ova of the louse being particularly resistant requiring 105°-106°. This heat does not injure the clothes or leather. There being no thermometers, a stick of naphthalene is employed; when this melts the desired heat has been attained.

C. All wounds are dressed on admittance, usually by the nurses or undergraduates, rarely by the surgeon in charge.

D. An attempt is made to classify surgical cases into certain wards; not infrequently the surgical and medical cases are indiscriminately admitted.

Estimate of Hospital Appointments:

E. Iron beds probably 40 per cent; wooden beds with no nails 30 per cent; wooden beds with nails 30 per cent.

F. Mattresses, felt or hair 10 per cent; mattresses, straw 80 per cent; hemlock boughs 10 per cent.

G. Sheets, one sheet 60 per cent; sheets, two sheets 40 per cent.

H. Pillow, straw 60 per cent; pillow, wooden elevation 35 per cent; pillow, feathers 5 per cent.

I. Blanket, one 75 per cent; blanket, two 25 per cent.

J. *Operating Room.* The best lighted room in the building is selected. In barracks, the operating room is constructed with this in view. The X-ray equipment and foreign-body localizers are unusually excellent, this department being run by an expert, the motor power in many instances being generated from a portable camion. The appearance, cleanliness, detail, technique and success of the operating room revolves around the personality and efficiency of the surgeon in charge. Surgical supplies and instruments are inadequate. Sterilized cellulose instead of gauze is being used in many hospitals to dress the wounds. There is a wasteful and extravagant use of suture material. Most of the bandages are put up by the American Red Cross. Rubber gloves are not used; we were told in Jassy that they could not be obtained. In Odessa there was an unlimited stock and we purchased 1,000 pairs for our hospital at Roman at 2 rubles, 80 kopecks per pair (about 70 cents).

K. *The water-closets* in every hospital are filthy, some beyond description; in all numberless flies were noted which must be a source of contamination. Apparently no effort is being made to control this evident and loathesome nuisance.

2. *The food* is insufficient and of improper character. The Red Cross Hospitals feed their patients better than the other hospitals. An illustration:

Breakfast 7 A. M.—Tea and black bread (whole rye and wheat.)

Lunch 12.—1. Soup, cabbage or weak vegetable. 2. Bread (black). 3. Beans (very few).

Dinner 6 P. M.—1. Soup, cabbage or weak vegetable. 2. Meat, three times a week, horse meat for prisoners. 3. Bread (black).

Tea served in the better hospitals at 4. P. M., no butter, no sweets, no coffee.

Bread. Whole flour is used in all the hospitals. Officers get 25 per cent white flour.

There are no meat extracts, fats, butter, oleomargarine, cocoa or delicacies unless brought in to the patient by members of their

families. The patients in the poorer type of hospitals are underfed and emaciated, although it must be remembered that in their homes, maize, with goat cheese ("Mamaliga") is their principal and constant diet. It would be an interesting investigation to trace the reported 20,000 cases of pellagra that existed in Roumania before the war. The paucity of stores in the larders was evident, and here as elsewhere innumerable flies were crawling about.

3. *Surgeons and Physicians.* There are at present approximately:

1300 Roumäinian doctors in Moldavia,
60 French doctors in Moldavia,
25 British, American and other nations;
or a total of 1385.

These surgeons do the civil work as well among the cities and villages and country districts. An illustration of the professional complement in a Roumanian hospital is:

A. *Evacuation Military Hospital No.* 9, Barlad. 200 beds, (154 surgical, 46 medical) 3 surgeons, 1 intern, 1 X-ray man.

B. *City Hospital for Red Cross*, Barlad. 325 beds. 2 surgeons, 4 interns, volunteer Red Cross nurses.

C. *Hospital No.* 217, particularly for officers. 150 beds. 3 doctors, volunteer Red Cross Nurses.

D. *Regina Elisabetha No.* 106, Jassy, 200 beds. 2 doctors, 2 interns, 1 sister.

E. *L'Hospital* 482, Barlad, 800 beds. 5 doctors, 14 interns.

The general character of the surgical work done, the apparent indifference to detail, that 90 per cent (estimate) of all dressings are carried out by the nurses, and that the Roumanian is temperamentally averse to assiduous labor, the minutiae of hospital routine and disciplined organizations, substantiates the belief that there is no urgent need for additional surgeons at the present as the work during the coming winter months will not be surgical but medical, but there is need for medical men to educate the public, combat typhus and typhoid, organize relief corps, and to cooperate with the Roumanian authorities for the segregation and prevention of the spread of the typhus scourge, the study of the etiology of icterus, scorbutus, pellagra and recurrent fevers, and for the treatment of dysentery, tuberculosis, cholera, typhoid and the usual medical diseases; for the establishment of dispensaries and charitable depots; for the psychological and scientific uplift, encouragement and preservation of the civil population who are crowded in the larger centres as Jassy, Roman, Bacau, Barlad, Galatz, Tecucci and Pietra.

4. *Nurses.* There are no regular trained Roumanian nurses. Princess Soutzo at Pietra started a few months ago a training school with a class of 40 who are to have a course of 6 months. They are then to be sent to different hospitals for educational, missionary and scientific work among the volunteer nurses. It is stated that there are 10,000 volunteer Red Cross nurses in the various hospitals and depots in Roumania. These young women in many instances represent the very best social classes, give their services freely not only in the surgical and medical wards but also as helpers in the kitchen and in other menial capacities.

5. The patients all appear undernourished, thin and even emaciated in many of the hospitals. In Odessa at the Invalid Benevolence, a Roumanian hospital, we were immediately struck how much better the men looked, it developing that the food they had was of a much superior character to that found in the hospitals in Roumania. The patients have on an average one change of pajamas and bed clothes every week. They are brave, long-suffering, well disciplined and solicitious of professional attention. The medical diseases are to be considered by other members of the Commission.

6. *Surgical Care and Character of Cases.* No hospital is devoted exclusively to medical or surgical cases, except the contagious hospitals, it being acknowledged that hospitals that are essentially medical in the winter are, in turn, essentially surgical in the more active warfare of the summer months.

A. *Transportation of the Wounded.* General Avenescu, Commander of the 2nd Army, with headquarters in Bacau, when asked what he considered most necessary for the army replied: "Rails, narrow-gauge cars and engines, for transporation of the supplies to the front and the wounded from the front." Dr. Catacuzene considers for the proper transportaion of the wounded 100 additional ambulances are absolutely necessary. Procuring these motors, however, does not assure their use as the oil wells of Moldavia are now in the hands of the

enemy and many cars are out of commission now because tires cannot be gotten.

An instance of how a wounded soldier is returned from an unusually inaccessible point at the front may be given here from personal observation on a visit to the first line trenches at Onesti. This particular sector runs along the crest of a range of the Carpathians and is about 17 miles from railway facilities. The stretcher bearers carry the wounded from the trenches or "No Man's Land" to the Post de Secours, some several hundred yards to the rear, here he is inspected by the surgeon in charge, the wound is dressed, he is given some hot soup, and the first injection of anti-tetanus serum is administered, and morphine is also given if there is a serious injury or pain. He is then carried along a tortuous trail of six miles, two fresh stretcher bearers relaying every mile. At the foot of the mountain the wounded man is then put in an ox-cart and is borne several miles further, these specific roads being impassable for automobiles. He finally reaches a first base hospital in this ox-cart, or he may have been transferred to a small auto *en route*, the roads and conditions permitting. The class of cases that are kept at this hospital for surgical care are the more serious type requiring immediate operation; the less seriously wounded or sick are hurried on by the railway to a more remote or second base hospital, which is designed for the reception of these medical or surgical cases. This first base hospital is the first clearing house that the soldier visits among the many that he must pass through before reaching the front again to participate once more in active warfare.

In most instances, the means of communication between the trenches and the rear is more rapidly and comfortably carried on, the stretcher bearers soon finding the automobiles, which along improved or established roads bring the soldiers within a few hours of the receipt of the injury to the door of the first base hospial. This class of hospitals are represented by the improved school buildings, warehouses, or rapidly constructed plank dugouts, with varying capacities from 50 to about 200 beds, and, dependent upon the activity of the sector that they are designed to drain, the wards are packed with groaning humanity or pretty well cleaned out awaiting new arrivals. There are 6 hospitals or bath trains identified with the Roumanian Army designed for transportation of the wounded over greater distances. One of these hospital trains of 12 coaches has been under the direction and supervision since January 1917 of Nurse Oteteneshano, the Matron at Saskut.

B. *Equipment of first base hospitals* is meagre and in many instances lacking. Buildings which have been converted through necessity into first base hospitals have not the organization and appropriate adjustment of the receiving rooms, wards, operating room, etc., as obtains in those newly constructed plank buildings which have been designed particularly for this character of work.

1. *Kitchens* in all instances are dirty, unattractive and infested with numberless flies; apparently no attempt has been made to screen or prevent this nuisance.

2. *The Food* is unappetizingly prepared and served only to those patients in the wards who are unable to walk to a mess hall. An illustration diet has alread been mentioned. Clay bowls and wooden spoons are provided to each patient in one of the hospitals in Bacau, this industry representing an enormous output by the convalescents.

3. *Water.* Roumania is said to suffer from a drought every summer and fall. The water supply, therefore, is inadequate and questionable, being brought varying distances, by carts, from wells (springs?), streams, to many of the hospitals where it is put in casks in the wards to be consumed by the patients. We recall but two instances (Cantemir 271. Barlad) where the water was boiled before being given to the patients. It was claimed at some of the hospitals that the drinking water was sterilized by permanganate of potash and by calcium chloride before being given to the patients. We did not have the opportunity to see this process being carried out.

4. *Fuel* in all hospitals is wood. There is no coal. Apparently no effort has been made by many of the hospital authorities to lay in a winter supply. Barlad and Bacau, large hospital centres, are remote from the wood producing districts.

IV. The water-closets have already been reported. The most loathesome and horrible conditions prevailing in fully 75 per cent of the hospitals. There are no fly screens used in the windows or doors.

V. *Linen,* pajamas, bed clothes, pillow slips and mattresses are insufficient, or of a most inferior character.

VI. Laundry department is identified with each hospital. With the price of soap at 4 francs a kilo, soiled clothes do not get the cleaning and sterilization which they demand. This offers a question, therefore, of reinfection by contact inoculation.

VII. *Drugs and Medicine, Pharmacal, Surgical Paraphernalia.* These are gotten from whatever source possible; the Roumanian Red Cross, the British Red Cross, private solicitations and the Minister of War. Although inadequate, improvisations are substituted, sterilized cellulose was very popular for gauze. Sterilization of dressings and water for operations was usually carried out by large autoclave, that of 60 litres capacity being the most popular. All bandages are washed and rewound. There is a limited supply of Plaster of Paris, although several hospitals are liberally supplied. There are many varieties of improvised splints, fashioned after the idea of the surgeon in charge. One of the most popular is that wooden adjustable supporting splint designed by Tomachewsky, the Russian surgeon. There are very few thermometers, several hospitals possessing none. No screens are used in the wards to segregate the exposed or dying cases.

In one of the hospitals, Brancovan, Jassy, a woman was noted making bacteria counts after the method of Carrel, and it was in this institution only that there has been an attempt to scientifically carry out the Carrel method of wound sterilization. In a few hospitals photographs are kept of the more interesting cases. Clinical charts and records are either not kept at all, or indifferently.

Surgical technique. Spinal anaesthesia for all operations by method of Jonnesco of Bucharest is adopted by practically every hospital, the Roumanian surgeons claiming that this method of anaesthesia is:

A. More immediate.

B. Cheaper.

C. More effective, and

D. Has less mortaliy than ether or chloroform.

It is interesting to note that the first cases that enter a first base hospital after a frontal attack are those injured by the obus, this goes along with the beginning of the threatened attack; the second day injuries are caused by the obus and rifle; and wounds on the third day are produced by the hand grenade. The character of these wounds differs.

Burns. We saw no cases either from sapping or premature explosions.

Gas inhalation. We saw but few of these cases and most of them were characterized by a severe conjunctivitis, other than the usual type of laryngeal and pulmonary œdema.

Guillotining the bones in cases of joint invasion is not as prevalent now as formerly.

Trench-foot. There was not an undue number of cases during the last winter.

Lock-jaw. All wounded receive inhibitory injections and the mortality is negligible.

Wounds of the thorax. 30 per cent die on battle field, of those reaching the hospital 23 per cent die.

Wounds of the abdomen and skull. These constitute the largest mortality of any class of wounds.

A. *Of the abdomen.* If the patient survives to reach the hospital he is made comfortable, given morphine and not operated on, the expectant treatment is universally adopted.

B. *Of the skull.* Patients survive operations requiring large loss of brain substance, but ultimately succumb with regularity if there has been infection.

The following table illustrates the organization of the medical department of the military forces at the front as adopted from the French.

Hospital Centres.	Nature of Wound.	Treatment Given.	Time Under Observation.
The Surgical Post for the Army Division.	1. Wounds of the thorax and "gas cases."	1. Treatment medical and immobilization.	1. 48 hours.
	2. Wounds of the abdomen.	2. Laparotomy if possible.	2. Evacuation 8 days after admission to next military depot.
	3. Wounds of the extremities with abrasion and hemorrhage, but not requiring tourniquet.	3. Hemostasis, more often amputation.	3. Evacuation as soon as possible after admission.
	4. Wounds of the larynx.	4. Tracheotomy very rare.	4. Sent the following day to a special hospital.
	5. Trivial wounds.	5. Bandaging.	5. Returned to the Regiment.

Hospital Centres.	Nature of Wound.	Treatment Given.	Time Under Observation.
Evacuating Hospitals.	1. Wounds of the skull.	1. Trephine.	1. 1 month with no injury to the dura, 2 months with injury to the dura.
	2. Wounds of the thorax.	2. Rest and medical treatment.	2. 15 days after evacuation to the rear.
	3. Wounds of the joints.	3. Arthrotomy, extraction of foreign body, resection, medical treatment.	3. Discharged 5 to 6 days later with Plaster of Paris bandage.
	4. Multiple wounds with foreign bodies.	4. Individual extraction.	4. First dressing 24 hours later.
	5. Wounds of the bones.	5. Individual removal of the pieces.	5. Discharged 5 to 6 days later with Plaster of Paris bandage.
	6. Wounds of the calf, and general contusions.	6. Medical or surgical attention.	6. Discharged immediately to specialist. (Neurological).
	7. Wounds of the genito-urinary organs.	7. Medical or surgical attention.	7. Discharged immediately to specialist.
	8. Wounds of the eyes.	8. Medical or surgical attention.	8. Discharged immediately to eye specialist.
	9. Wounds of the face.	9. Medical or surgical attention.	9. Discharged immediately to a special hospital.
	10. Slightly wounded.	10. Surgical treatment.	10. Discharged to a special zone of the Army.
	11. Amputated.	11. Treatment.	11. Retained in a special pavilion annexed to hospital.
First Base Hospitals and Specialists.	1. Wounded who have been discharged immediately or later and developed serious conditions "en route."	1. The appropriate surgical treatment.	Discharged to the rear of the Army if there has been more than 1 month of treatment.
	2. Wounds of the thighs, buttocks and general severe contusions.	2. Neurological.	
	3. Wounds of the eyes.	3. To an eye specialist.	
	4. Wounds of the face.	4. To the specialist.	Retained if less than a month of treatment.
	5. Wounds of the ear, pharynx and larynx.	5. To the specialist.	
	6. Wounds of the genito-urinary organs.	6. To the genito-urinary specialist.	
Second Base.	1. Other injuries.	1. Revision and keeping under observation if there is room.	Same as in First Base Hospital.

In consideration of the above observations the following conclusions have been made.

A. *Hospitals.* There are a sufficient number of hospitals for care of the military sick and wounded; about 60,000 beds have been established which equals one bed to four soldiers as previously shown. This should prove ample except in the event of a large offensive attack or an overwhelming recurrence of typhus-exanthematicus. Numerous dispensaries and supply depots for the civilian poor and needy should be started, these depots do not have to be attended necessarily by surgeons. The surgical standard of the Roumanian hospital is low, cosiderably lower than obtains on the western front under similar war conditions, and vastly inferior to what we are accustomed to in America.

B. *Hospital equipment and foods.* There is an urgent need for hospital supplies, drugs and surgical equipment of all kinds. Roumanian ingenuity has shown itself on many occasions in producing substitute improvisations; these are about exhausted now. Russia could supply most of the necessities; there are, however, at present, many demands upon her source of supplies. France has given freely and continues to maintain her Roumanian hospitals. England is most generous through her Red Cross organizations and donates liberally. America must supply constantly those articles which cannot be gotten from the above named

sources. The more important are bed clothes, hospital garments, drugs, surgical paraphernalia, knives, scissors, haemostats, Plaster of Paris, adhesive plaster, bandages, gauze, cotton, antiseptic solutions, screens and netting for windows, soap and foods, particularly the fats, milk (condensed), meat extracts and bread; biscuits, tinned products and preserves would greatly help the convalescent stage. How these hospital supplies and foods are to reach Roumania is a question of transportation of great interest which is to be considered by other members of the Commission.

C. *Nurses.* There is no need for the American trained nurse in the Roumanian hospials. Roumanian Red Cross nurses are doing a very noble and useful work. The American or British trained nurse could serve only under American or British organization in a hospital. Household or district nursing and social work carried on by the American nurse under the auspices of American surgeons would be educational to the civil population and, in the smaller towns, villages and rural districts would assist in the partial control of the infectious diseases.

D. *Physicians and Surgeons.* Alhough the total number of physicians in Roumania is small, much smaller than should obtain, it is questionable if the addition of many American physicians would be desirable or acceptable. It is the opinion of the writer that it would be unwise to send American physicians to Roumania to work with and among the Roumanian physicians in carrying out either a military or civil practice. The American physician should be established only as such in American hospitals, under distinctive American auspices and prestige, where his desire and work would be to assist, uplift, educate and encourage a people who have been decimated by disease, overwhelmed by superior forces and threatened by famine, whose fortitude and constancy have been unshaken, and who, in continuing under such adverse conditions to hold their battle front, are offering an example that America cannot fail to be cognizant of and proud to assist and support.

Grace Hospital.

CLIMATE AND TUBERCULOSIS.

By R. C. KIRKWOOD, M. D., (Major M. R. C.),
Lakeview, Wash.
Former Supt. Pierce County (Wash.) Sanatorium.*

The value of climate in the treatment of tuberculosis has long been recognized. Hippocrates said, "If you have that consuming fever of the lungs go into the hills and live on the fruit of the cow." Time was when climate was given first place among the factors of value in the treatment of this disease. More recently its influence has been the subject of much discussion among phthisiotherapists and it has fallen into more or less disrepute. I shall not discuss this phase of the problem except to say that if the patients can have *all* the other things that make for restoration to health climate is a factor of distinct value.

The word climate is derived from a Greek word meaning inclination or slope. As we reckon it today climate takes into consideration the temperature of the air, its humidity, density, motion, transparency, and electrification and the amount of sunshine and precipitation. Climate leaves its impress on the life, habits and character of all races and all peoples. The Eskimos would find life outside the Arctic Circle almost unendurable; the Latin races of Europe live readily in the tropics where the Teutonic stock must struggle incessantly for existence. In the deserts and on the great treeless plains where water and grass often fail, man becomes a nomad, whereas in the forests of the north he fells trees and builds himself a cabin. Climate effects the character of the habitation man erects. Under the hot sun of the tropics his home is open and low, shade is sought and every breeze is courted. As one goes to the north the houses are higher, the openings fewer and the construction changes to compact stone and brick. Climate leaves its imprint upon fiction and history, upon poetry and prose. To the wandering Bedouin, he who dug a well was a benefactor. Green trees and running water were his ideals of Paradise. In the colder north the halls of Valhalla were their hope of a hereafter.

There is no specific climate for tuberculosis, none where every case will do better even under the most ideal conditions. The great Trudeau found his ideal climate conditions amidst the rigors of an Adirondack winter,

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others do best in the elevated regions of the semi-arid Southwest, others in a more moderat altitude such as this where, while the precipitation is greater, there is a like abundance of sunshine and none of the wind and dust storms so annoying in the Southwest. The climate that is conducive to the most pleasant and most constant out-of-doors existence is, other things being equal, the best climate for the average pulmonary invalid, for in the out-of-doors both man and animals are freer of disease. The cattle on the ranges thrive better and are less subject to disease than those confined in stables. Conditions unsuited to the maintenance of health by the well may be expected to be still more unsuited to the restoration to health of those who have to combat disease.

Tuberculosis is a disease of slow course and the fight between the infective agent and the host is a prolonged one. There being no known specific for the disease, therefore, recovery depends upon doing everything possible to aid the body in its struggle for supremacy over the malady. To this end, we say the patient shall live a careful life in a suitable environment and, in addition to proper diet, rest, exercise (when prescribed), amusement and *happiness*, a suitable environment implies the suitability of the atomsphere or climate to promote the highest physiologic efficiency of the human machine. To the person afflicted with tuberculosis the possible benefit to be derived from a change of climate frequently suggests itself or is suggested even before due consideration is given to the many other things of equal or greater importance than climate *per se*. To the majority (thanks to an intensive campaign of education this idea is becoming less and less prevalent) of consumptives the "cure", like the "mother lode" to the miner, is usually just beyond the ridge; he has the too common idea that somewhere afar off there is a region with a climate best suited to the tuberculous and that if he can just get there this climate alone will affect a "cure". This is absolutely false and has been the cause of much misery and suffering and it is our duty to refute it at every possible opportunity. Climate is at best but a factor in treatment and by no means the most important factor, and unless the other factors, rest (and plenty of it), good food, open air (out of doors), good housing, proper medical supervision and freedom from worry, can be obtained, and *all* obtained, with a favorable climate the "cure" will be as elusive as the "mother lode" and the favorable climate will avail us nothing.

The conditions to be sought in a climate for the tuberculous are those atmospheric conditions most suitable to maintaining the normal physiologic functions of the body at highest efficiency and most conducive to a pleasant and continuous out-of-door existence, conditions of value to the well-being of the healthy but of special importance to those who have a chronic infection, such as tuberculosis, to combat. The things which make a climate favorable or unfavorable, relatively speaking, for the tuberculous are the temperature and degree of humidity of the air, the frequency and velocity of winds, the amount of sunshine and precipitation, the transparency of the air and the presence or absence of dust or smoke. The most favorable temperature is one that is comfortably cool. Very cold weather is uncomfortable to some and ill-borne by the very weak; it is likely to tempt patients to remain in doors but in this indirect way only does it have an ill effect. The men who have been working at Saranac for years tell us that one winter is worth two summers and there winters are pretty severe. Very hot weather is debilitating and is poorly borne by the tuberculous. Moderate daily changes between night and day temperatures are an advantage and act as a physiologic stimulus to all body functions. Humidity is of more importance, for the greater the humidity the less favorable is the climate for the average tuberculous patient. Both heat and cold are more poorly borne if the humidity is high. Winds are distinctly annoying and objectionable and render certain regions, otherwise favorable as resorts for the tuberculous, very unfavorable at certain seasons of the year. Winds stir up dust which irritates mucous membranes already inflamed and they rob the body of its heat, by conduction of the wind if damp, by evaporation if it is dry. Sunshine for the greatest possible number of hours per day and days per year and a relatively light precipitation (preferably more snow than rain) are factors which add to the value of a climate suitable to the tuberculous. Clear rain and the absence of fogs are favorable factors and the smoke and noxious vapors, particularly of industrial centers, are correspondingly unfavorable to the

tuberculous. Practically all regions in the temperate zone offer favorable weather conditions for part of the year; some have longer periods of favorable weather than others, *all* have some periods that are distinctly unfavorable due in some sections (i. e. the Southwest) to excessive wind velocity and dust storms, in others to an excess of humidity, great precipitation, lack of sunshine or what not. No climate is entirely good and few are entirely bad.

Many tuberculous patients find fault with their home climates when the real trouble is with them. They are not availing themselves of the favorable climatic conditions existing there. However, this constant finding fault with the climate, this spirit of unrest and constant feeling that somewhere is a more favorable climate than the one in which they are now living, this "wander-lust" of the consumptive is a trait characteristic of the tuberculous, a trait well recognized by those who have been for any period closely associated with any considerable number of tuberculous individuals, a trait which I have previously likened to the miner's constant quest of the "mother lode". The consumptive who contemplates going to a distance in search of a more favorable climate must consider well the sacrifices he will have to make and whether the gains will compensate the losses. He must consider the expenses and more or less hardship of the journey and the fact that living expenses are always higher in resort regions than elsewhere. He must consider the question of being able to secure proper medical supervision and nursing care, the question of proper and sufficient food, essential to everyone, but vastly more so to the consumptive. Many cases go to resort regions in the hope of working to pay their expenses. Work is harder to get in these regions than elsewhere; the consumptive cannot compete with the healthy worker and work will in the great majority of instances be too great a tax on the strength of the patient and will more than offset any good effect obtained from the bettered climatic conditions. Unless the patient is financially able to go to the resort region and live properly for at least one year (have at least $100 per month available) without work or *worry* he had better remain at home and make the most of climatic conditions existing there, for, as Pottenger (Pulmonary Tuberculosis—p 220) has aptly said, "it is better to make good use of a bad climate than bad use of a good climate". Every pulmonary invalid needs medical supervision, particularly during his early career as a consumptive, for he must be taught how to live, what to eat and how to eat it, what he may do and what he may not do, etc., things best taught in that great training school for the tuberculous, the sanatorium. He must take into consideration all these things and also the home-sickness that will come, separated from family and friends, in a new locality among strangers and must consider the effect of the worry that will be his as to the welfare of his family during his absence.

SUMMARY.

No locality in the United States (or elsewhere) has a climate that is absolutely favorable for the consumptive at all seasons of the year. Most localities have favorable climate conditions for a considerable portion of the year if one will only avail oneself of them and cease one's constant fretting to go to some supposedly more favorable region. The Southwest, for many years held in high repute as a region offering favorable climate conditions for the consumptive, has a favorable climate for a considerable part of the year, but it too has its disadvantages. The wind and dust storms in the winter and spring are a distinct disadvantage and very annoying; some patients will find the heat enervating, others that the altitude necessary to escape this heat puts too great a strain on the heart and lungs, others (particularly the very debilitated) that the variations between night and day temperatures are too great. Briefly, the most favorable climate for the tuberculous is one in which—

1. It is always comfortably cool (no enervating heat.)
2. There are fairly well-marked variations between night and day temperatures, but not excessive variations.
3. There is moderate wind movement (no real wind storms) just enough to create a breeze.
4. There is as little dust as possible and no dust storms.
5. There is a minimum of humidity.
6. There are no noxious vapors and no smoke.
7. There is moderate precipitation, a greater portion being snow.

8. There is a maximum of sunshine all the year round.

However, to be of any avail one must be able to secure in addition to this favorable climate *all* the other essentials,—plenty of rest, suitable food, proper medical supervision and nursing care, to exercise only as prescribed by the physician and be free of worry, for *happiness* is as important a part of treatment as is rest, open air, good food or anything else. If he is unable to avail himself of these other essentials, he had better remain at home, and as Dr. Pottenger says, "make good use of a bad climate" which will doubtless be found not to be so bad after all if good use is made of it.

In conclusion, I desire to thank Dr. F. B. Brewer for valuable criticisms and suggestions during the preparation of this paper.

SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

By CLIFTON M. MILLER, M. D., Richmond, Va.
Associate Professor of Rhinology and Otology, Medical College of Virginia; Member of the Staff of the Memorial and Stuart Circle Hospitals, etc.

A paper on submucous resection of the nasal septum before this body would seem a work of supererogation and this is not presented as adding to our knowledge of the subject. It is, however, sometimes wise to review a surgical procedure which has been in use for a long time, and see if, by talking it over, we can aid each other in perfecting our technique or in clearing up the difficulties that may occur in our procedure. What seems an almost insuperable difficulty to one man is sometimes an easy procedure to another, and by getting together and talking over difficulties many clouds may be cleared away.

Submucous resection of the nasal septum is not the operation of any one man, nor can any operator lay claim to having devised it, as we now know the procedure. It has been a gradual building up here and taking away there, improving and simplifying until it has reached its present state. The names of Krieg, Boeninghaus, Ingals, Freer, Ballenger, Hajek and Killian stand out most prominently as the pioneers in the field, but others have added their quota to the sum-total and the names are too many to be mentioned.

Two decades ago every teacher of rhinology was following the lead of text-books and telling his students of a dozen or more operative procedures for the correction of deformities of the nasal septum; from this multiplicity of material he probably selected two or three which, to his mind, best met the indications, and perfected himself in their use and demonstrated them at his clinics. There are comparatively few of the rhinologists of today who could describe off-hand the technique of these various operations if they were called upon to do so without previous preparation.

The special instruments devised for each technique have been relegated to our cabinet containing mementoes of the past or else our ingenuity has enabled us to use them in some more modern method.

Deviation of the nasal septum interfering with aeration and drainage of the nasal chambers and accessory sinuses is responsible for more pathology in this region than any other single factor; hence, it is very necessary that it should be corrected. The operation that best does this, giving the most permanent results, is window resection of the septum, in which the mucous membrane covering the cartilaginous and bony portion is preserved. There occur cases where it is not necessary to remove the entire thickness of the septum, but sawing off the projecting ridge entirely corrects the obstruction. In these cases the mucous membrane should be elevated and the spur sawed off, then the membrane replaced.

The indications for the operation are a deviated septum or extreme thickening of the septum sufficient to interfere with physiological drainage and aeration or making pressure in the ethmoid region through drainage and aeration are not manifestly interferred with. The first indication of this condition is frequently persistent headache, which is liable to be worse about the time of arising from sleep, and to get better after moving about in the upright position; however, it is not infrequent that headaches which have all the apparent indications of being of ocular origin are due to pressure resulting from a deviated septum. Asthma, which is not distinctly traceable to cardiac or renal disease should be the cause of a most careful and searching examination of the nose and a definite pathological condition of the ethmoid due to deviation of the nasal septum will often be found. Focal infections with their attendant trail of evils, often in most remote parts of the body, have received much attention of late, but the teeth and tonsils have monopolized the greatest part of this atten-

tion. The nasal accessory sinuses and ethmoid labyrinth are too frequently overlooked, for here is the location of the infecting focus in very many cases, and deviation of the septum has been the factor that caused the focus to be formed. A prominent internist said to me that, in his opinion, it was as important for the general practitioner to have an understanding of the use of a head-mirror and nasal speculum as it was to understand the use of the stethoscope. In this opinion, I fully concur.

The technique of the operation is variable, like that of all other surgical procedures, each operator having small points of technique that others probably do not use.

Local anesthesia is best. If the patient is very nervous, a hypodermic of morphine sulphate, grain ⅛ to ¼, combined with atropine sulphate, grain 1/150, and hyoscine hydrobromate, grain 1/100, will greatly quiet the nervous symptoms and reduce the sensibility to pain. Wring a cotton swab out of sterile water and dip into cocaine flakes, and with this sort of swab, rub each side of the septum thoroughly, doing this two or three times at intervals of ten minutes; immediately after the last rubbing, cover each side of the septum with cotton swabs, saturated with 1/1000 adrenalin solution. In five or ten minutes, remove swabs and inject under the mucous membrane the weakest Schleich solution. This will thicken the membrane and should be made under the perichondrium, thus beginning the separation and making operation easier.

The initial incision may be curved or straight, but should be upon the side of convexity, and in front of the curved portion of the septum. If the convexity extends very low down toward the nasal floor let the incision be prolonged across the floor.

The mucous membrane and perichondrium must be cut through, letting the knife edge cut into the cartilage a little, while the little finger is held in the opposite nostril.

Then, with various shaped elevators, separate the peri-chondrium and periosteum from the cartilage and bone, working from above downward and from behind forward, until the mucous membrane upon the side where incision was made is freed from the underlying bone and cartilage. In some cases where the angle is near the floor, it will be necessary to separate the membrane from the floor and work upward to the angle from below to meet the separation made from above down to the angle. Cutting through the cartilage to the concave side without injuring or perforating the membrane is frequently a task of some difficulty and the spoon curette makes a safe instrument for this purpose, using it with the finger in the opposite nostril to make counter pressure. Having cut safely through the cartilage, elevation of the mucous membrane on the opposite side is proceeded with till it is free from the underlying bony and cartilaginous septum. Next, with bone forceps, swivel knife, etc., we remove the cartilage and bone down to the angle. In my hands, the chisel with V-shaped cutting edge has proven most satisfactory for removal of the ridge, cutting close to the floor with careful but firm taps of the mallet, and now and then moving the handle of the chisel up and down to separate the fragment as it is cut; remove the ridge with heavy forceps and a slight twisting motion to free its posterior extremity.

After removing the stiff portion of the septum and placing the two mucous layers smoothly with their underlying perichondrial and periosteal layers in apposition, if there has been much bleeding, a small button-hole can be cut on one side down near the floor for drainage.

I always pack, believing that packing keeps the parts in better apposition, reduces postoperative bleeding and the liability to hæmatoma or abscess. These advantages have seemed to me to outweigh the disadvantage of a stopped-up-nose for twenty-four hours.

A good packing is a Simpson-Bernay's sponge in a thin rubber finger cot. The finger-cot should be boiled and after the sponge is put into it, several cuts are made in it to allow secretions to be absorbed. Place one in each side and do not remove for twenty to twenty-four hours. After removal, the nose should be sprayed daily for several days by the surgeon. Be careful not to meddle unless a distinct reason for so doing arises. Special accidents must be met as they arise. The after-results of this operation are very satisfactory.

3 *West Grace Street.*

It is stated from London, according to official statistics, that vivsection experiments last year on living animals totaled 55,542, or 10,501 less than in 1916. Of this number, 6,231 were cancer investigations, while 22,600 were for the preparation, testing and standardizing of sera, vaccines and drugs.

Practical Points in Current Medicine

Internal Medicine

Classification of Neurocirculatory Asthenia Cases In Use At Camp Upton.

Atkinson, of the Cardio-Vascular Board, at Camp Upton, submits the following as a guide to examination of draftees:

1. Tachycardia.

Persistent tachycardia with poor response to exercise, dyspnea on slight exertion, pulse persistently over one hundred after from two to five minutes rest, recumbent. Etiology may be unknown or there may be a history of any one or all of the following diseases: Any of the diseases of childhood, especially diphtheria, scarlet fever and chorea; typhoid fever, syphilis, chronic tonsillar infection, pansinusitis, rheumatic fever, etc.

2. Hyperthyroidism.

3. Neuro-Circulatory Asthenia. Under this heading we have classed those cases which have corresponded to Lewis' description as closely as seemed practical, viz.:

(a) An evident neurosis with neurotic faces.

(b) Inclination toward obesity, sweating.

(c) Cyanosis of hands and feet, with bluish mottling of trunk and thighs.

(d) Apparent instability of vaso-motor system.

(e) History of breathlessness all life.

(f) General poor response to exercise of entire muscular system.

It is quite evident with this picture before us to clearly differentiate from the condition known as "Endochrinopathy," with the clinical means at our disposal.

It is to my mind quite evident that the term N. C. A. has been used too extensively and I feel that with our present knowledge, each of these conditions are so closely allied that it is impossible, indeed unprofitable, to draw fine lines of distinction. Suffice it to say these three groups are not qualified for any military service.

It has, therefore, been our custom to use the broad term "Tachycardia" in line cases rather than attempt a refinement of diagnosis, which is next to impossible.

4. Tachycardia cases which should be accepted for service.

There are under a fourth grouping, rapid hearts, 130, 135, even 140, with over-action after exercise, but who we think should not be rejected, where hearts quiet down immediately on rest, the condition being due apparently to lack of training. These individuals have led sedentary lives and experience has proven their worth in the army.

In conclusion, let me say that it is in my opinion unfair to the government to accept persistently rapid, over-acting hearts, with the hope that army life will be of benefit. The history of the various Development Battalions has proven this is not so.

Obstetrics

Influenza and Pneumonia Complicating Pregnancy and Labor.

When the full reports of the mortality of the present epidemic of influenza and pneumonia are received, I believe that the pregnant and recently delivered women will be given a very high rate, probably as high as seventy-five per cent. I have heard of more than a half a dozen women in Richmond losing their lives in the latter months of pregnancy from the epidemic, and one or two in the early months following an abortion. Lactation in most women seems diminished by the influenza, and death of the child unborn has occurred.

My experience has been limited, but the following cases will bring out some of the points.

Case 1.—Mrs. J., age 20; third pregnancy: brought to the hospital with pneumonia following influenza; temperature 104, pulse 130, respiration 38. Was delivered normally in forty-eight hours, and has recovered, with diminished milk secretion.

Case 2.—Mrs. W. Had pneumonia at thirty-sixth week of pregnancy, but very little sick apparently, recovered and delivered at term of small baby. Milk secretion very small amount.

Case 3.—Mrs. ——. First pregnancy. Influenza. On third day taken in labor. Pains very weak, and coughing a great deal; as soon as the cervix was fully dilated, the waters were broken and she was delivered by forceps, to save the strain on her lungs. A very small amount of chloroform was used, as anesthetics should have a *definite indication* for their use during this epidemic.

Case 4.—Mrs. ——. Brought in from one of the counties with pneumonia and died within

one hour of her arrival. She was undelivered and was only brought to the city because her doctor had more than he could do.

Csae 5.—Mrs. B., age 21. First pregnancy, thirty-eighth week. Had influenza followed by pneumonia in both lungs. On the fourth day pains started like labor, but soon subsided, and no further motion of the child nor could the fetal heart beat be heard. Her kidneys were soon impaired and edema of the lungs closed the chapter. Her child was undelivered.

I know of at least six similar cases, as far as rumor goes, and one or two deaths following abortion. Several of these died within forty hours after delivery.

All pregnant women should stay away from infected people, and it is better for them to be over-careful, than to take any risks with such a fatal epidemic.

VIRGINIUS HARRISON.

General Surgery

War Wounds of the Lungs.

"I have removed the human lung from the chest cavity with forceps, tied its bleeding blood vessels, cleansed its outer surface, and, while still holding it in my hands and manipulating it as you would a handkerchief, I have run thin pieces of gauze up its tracts. Feeling my way carefully along its walls I have removed a bullet or shell fragment. Then, after suturing the aperture, I have placed the respiratory organ back into the cavity of the chest. In two-thirds of the cases upon which I have so operated the patient lived."

This was one of many statements made recently to 1,200 medical officers of the American Army at Camp Greenleaf, by Colonel Pierre Duval, of the French Reserve Medical Corps. Colonel Duval is here with ten of the foremost surgeons of England, France, and Italy, to attend the Inter-Allied War Conference of Surgeons. The medical experts are on a tour of this country and will visit several large cities to give first-hand information to the medical fraternity of military surgery as practiced and developed in base and evacuation hospitals at the front.

This is the first inter-allied surgical congress held in America since the United States entered the war. Its results are expected to bring about many changes in methods of treatment of gunshot wounds hitherto accepted by doctors the world over.

Among the new discoveries of surgery demonstrated to the assembled doctors was the use of a rubber balloon employed as a stoppage to the chest cavity after a major operation.

Professor Raffaella Bastianelli, professor of surgery at the University of Rome, showed how this bag might be inserted into the chest cavity and then inflated, to prevent infected air from entering the chest walls. According to Professor Bastianelli, this new device may be used to patch up a wounded man, much as an automobilist uses a rubber plug to patch up a leaking tire.

Colonel Duval said pieces of a torn lung may be excised and sutured with perfect safety to the patient in the hands of a skilled surgeon.

"The method," he said, "is to saw out a six-inch section of the fourth rib and lay bare the entire chest cavity. Then, with thoroughly sterilized forceps, the lung is lifted from its normal position. Great care should be taken not to cut into large vessels of the lung. Finger tips serve for eyes. The surgeon can manipulate the soft tissues of the respiratory organ as though it were a handkerchief.

"Of course, the lung is totally collapsed while this is being done. The walls are then opened and thoroughly cleansed. When large blood vessels interfere, a piece of gauze is inserted in the tracts and run over the surface until they are thoroughly cleansed. It is not an exaggeration to say that the lung is literally swept out.

"After the battle of the Somme, records were kept of 300 lung cases treated medically. Twenty-eight per cent. of the men died. Of a similar number treated surgically, only eight and one-half per cent. died. Doctors need no longer have fear of cutting into the chest cavity and performing the most delicate operation. Wartime surgery has completely done away with old-time notions. We have entered upon a new era of medical science."

That the Germans are far behind surgeons of England, France, and Italy, was indicated by figures supplied by Colonel Duval. These figures showed that in fifty-nine operations upon the lung performed by a "renowned" German surgeon, forty-nine of the patients died.—(*N. Y. Times*, Oct. 30, 1918).

Editorial.

Complications.

The complications of influenza are numerous. The pulmonary complications are the most important. The persistence of the high fever, after several days, the dry cough, and the evident increase in adventitious sounds over the chest, are enough to make the physician suspect influenzal invasion of the lower bronchial radials. To wait for the former physical signs of lobar pneumonia is to wait too long. Long before crepitant rales and dulness appear in periphery of the lobe, broncho-pneumonia of a confluent variety, in most cases, is advanced and the patient is toxic and in serious plight. The complications will need to be studied very closely. No doubt after the epidemic is over and various reports come in, much valuable information will be gotten explaining the bacteriology and pathology. One can not help, however, in the very shadow of a dreadful epidemic, with its high mortality of pneumonia cases, calling attention to the studies made upon pneumonia in the army camps last winter when so many soldiers died.

The streptococcus hemolyticus, the reader will recall, complicating measles and scarlet fever pneumonias, seemed to add to the high mortality.

Keegan (*Jour A. M. A.*, Vol., 71, No. 13, page 1051), summarizes an interesting study of 2,000 influenza cases, by saying:

A rapidly spreading pandemic disease was first recognized at the U. S. Naval Hospital, Chelsea, Mass., August 28, 1918, the first patients coming from the receiving ship at Commonwealth Pier, Boston. It has been carried to this port from Europe, both by patients and by carriers. It promises to spread rapidly over the entire country, attacking between thirty and forty per cent. of the population, and running an acute course of from four to six weeks in each community.

This disease is characteristic of the ordinary endemic influenza, but is more severe and much more contagious. It is caused by a specific virulent strain of the influenza bacillus, against which individuals of the younger generation have no immunity.

In from five to ten per cent. of the persons afflicted, it develops into a massive and very fatal bronchopneumonia. This pneumonia is primarily caused by the influenza bacillus, this micro-organism being recovered from 82.6 per cent. of the lungs at necropsy, in 31.6 per cent. of which it is found in pure culture. The pneumonia is frequently complicated by *pneumococcus* or *streptococcus* infection.

The disease is characteristic of a sudden and severe toxemia, the influenza not being in the blood at any stage. It is not due to a filtrable virus. This was determined by introduction of the filtrate of nasal and throat washings from two typical cases into the anterior nares of nine volunteers, the results being negative.

A. G. Brown.

Pneumonias Complicating Influenza.

Following is an extract from a circular letter issued October 24th, to the doctors of the state, by Dr. R. W. Garnett, acting Health Commissioner, regarding use of antistreptococcus serum in pneumonia:—

Doubtless you will be interested in knowing that further study of the pneumonias following or complicating influenza here in Richmond confirms the earlier conclusion that about seventy-five per cent. are of the broncho or lobular type, with the streptococcus as the predominating organism in a mixed infection. While the data is still inconclusive, the concensus of medical opinion here is that antistreptococcus serum given early intravenously in from twenty to fifty c. c. doses, at eight-hour intervals, is of decided value, and is saving some cases that would otherwise be lost.

The blood count is of inestimable value in these pneumonias. The cases showing a low total leucocyte count are, as a general rule, the ones indicating the need of the antistreptococcus serum. Where the count is high it is considered that the pneumococcus is the predominating organism, and that antistreptococcus serum is not indicated. In some of the latter class, antipneumococcus serum is being used.

Where it is impossible or impracticable to secure blood counts, it is believed that physicians are justified in using the antistreptococcus serum in those cases in which there is conclusive evidence of the broncho type of pneumonia.

There is relatively little danger of anaphylaxis from the use of this serum, except in cases with an asthmatic history, or with those who have within the preceding two or three years been sensitized to a foreign serum by having been given diphtheria or tetanus antitoxin.

It is suggested that in instances where there

is reason to fear anaphylaxis, the following precautions be taken:

First, precede with 1/8 of morphine and 1/100 of atropine hypodermically.

Second, have ready for immediate use, in case of need, a hypodermic containing a solution of adrenalin, 1 to 1,000.

Third, that one c. c. only of the serum be injected, and then wait for ten minutes to determine if shock occurs. If within this time no contraindications develop, the remainder of the dose may be used. There is danger of anaphylaxis only with the first dose. Where chill occurs following injection of serum, morphine, hypodermically, and hot blankets are indicated.

News of M. R. C. Officers.

Lt. J. P. Bowles, of this city, left November 2, for his new duties at the naval base training school at Buffalo, N. Y.

Lt. George T. Divers, formerly of this State, but for the past few years of Mount Airy, N. C., was a recent visitor in this city.

Dr. Alvin F. Bagby, of Petersburg, has received his commission as first lieutenant in the medical corps of the army, and has been ordered to report to the "British Corps," located at Camp Polk, near Raleigh, N. C.

Dr. R. S. Fitzgerald, of this city, has received his commission as captain in the medical corps, and left recently for Camp Greene, N. C.

Lt. John W. Robertson, Onancock, Va., received orders to report at Ft. Oglethorpe, Ga., November 8.

Dr. A. P. Derby, Monrovia, Va., who enlisted last year, has been commissioned a captain in the medical corps and left for Ft. Oglethorpe, Ga., the latter part of October.

Dr. H. B. Mahood, who has charge of the medical reserve corps of the University of Florida, recently spent a short furlough at his home in North Emporia, Va.

Dr. E. C. Levy, former city health officer of Richmond, who entered the service last August as a captain, has been promoted to the rank of major. He is epidemiologist at Camp Pike.

Major C. C. Coleman, of this city, has been made director of the School of Neuro-Surgery at Ft. Oglethorpe, Ga.

Dr. J. S. Weitzel, this city, who has been commissioned lieutenant in the medical corps, left early this month for New York City, where he is stationed at the Neurological Institute.

Dr. John W. Martin, of Roanoke Rapids, N. C., visited relatives in Gordonsville, Va., the latter part of October, *en route* to camp at Jacksonville, Fla.

Dr. C. Wilbur Mercer, of this city, now stationed at Camp Custer, Battle Creek, Mich., as an orthopedic surgeon, has been promoted to the rank of captain.

Dr. Dandridge P. West, Norfolk, who was commissioned lieutenant in the medical corps of the Army, was ordered to report October 31, to the Base Hospital, Camp Zachary Taylor, Louisville, Ky.

Major George E. Barksdale, formerly of this city, is now on duty at the post hospital, Ft. Monroe, Va.

Capt. J. W. Walters, Lynchburg, Va., who recently went to Camp Greenleaf, Ga., has been selected as one of nine surgeons to make a special study of head surgery there.

Dr. E. J. Nixon, Petersburg, Va., received a commission as captain in the medical corps of the Army, with orders to report at Ft. Oglethorpe, Ga., for duty, early this month.

Dr. J. D. Osborne, Petersburg, has also been commissioned captain in the medical service of the Army.

Dr. L. S. Early, Petersburg, has been commissioned a lieutenant in the service.

Capt. M. C. Sycle, of this city, has been transferred from Ft. Oglethorpe, Ga., to Ft. Benjamin Harrison, Ind.

Those interested in the personnel of Base Hospital No. 45, largely made up of Richmond doctors, under the command of Lt. Col. Stuart McGuire, of this city, will be glad to know that the men are doing a good work "over there." They have been on duty twelve miles from the firing line, where the roar of guns may be plainly heard. It is the first base hospital to be sent so near the front.

Lt. Charles R. Irving, formerly of Howardsville, Va., who was gassed in action in France, has been sent to Asheville, N. C., to recuperate. His condition is now much improved.

Married

Dr. William Ashton Reese, formerly of Grace Hospital, this city, but now lieutenant in the U. S. Navy, and Miss Helen Parrish, of Fluvanna County, Virginia, October 19. They are making their home at present in Norfolk, Va.

Dr. Robert Lemmon and Miss Mary Withers Bigbie, both of Lynchburg, Va., November 5.

Dr. Ira J. Haynes,

Formerly connected with the W. B. Saunders Company, is now located at 3418 East Broad Street, this city, and engaged in the active practice of medicine.

Lt. Col. Alfred P. Upshur, M. C.,

Son of Dr. and Mrs. John N. Upshur, this city, has been made a fellow of the American College of Surgeons. His name was submitted by the Surgeon-General as one who had performed special service with merit during the present emergency.

Convalescent Home For Naval Officers.

The Surgeon-General of the U. S. Navy has designated the hospital at Elizabeth City, N. C., as a convalescent home for naval officers. A contract was signed with Dr. John Saliba, owner of the Elizabeth City Hospital, specifying that a minimum number of fifty officers of the navy would be constantly stationed there. The hospital was ready for convalescent officers of the Navy November 1.

Dr. and Mrs. Alvah S. Hudson

Have returned to their home in West Point, Va., after a short trip to Baltimore.

Dr. Milton B. Coffman,

Of this city, who went overseas as a lieutenant in the medical corps of the Army, last summer, and who was recently slightly wounded in action, has been awarded a military cross for gallantry in action.

Dr. James Weldon Smith,

Who has been located on a rural route from Farmville, Va., has moved into Farmville, and will make his home there.

Mexico Visited by Influenza.

Spanish influenza, with which our country was so afflicted in October, also visited Mexico, and was epidemic in practically all parts of that country. The mortality in most places was low. Probably the worst center of infection was at Gonzales, where eighty per cent. of the population was said to have suffered with the disease and the deaths numbered several hundred. Public gathering places were likewise closed in Mexico during the height of the epidemic.

Dr. Peter Winston,

Farmville, Va., was a visitor in this city early in the month, having come to attend the regular meeting of the State Board of Charities and Corrections held here.

Dr. Samuel Saunders, Jr.,

Formerly of this State, but who has for some time been in the U. S. Public Health Service in Georgia, has recently been transferred to Washington, D. C., and detailed to special work in that section.

Dr. William P. Caton,

Formerly of Accotink, Va., is now connected with the State Board of Health, with present headquarters in Alexandria, Va.

Large Number of Deaths from Influenza and Pneumonia.

The Bureau of Census shows a tremendous mortality in the United States from influenza and pneumonia. Total deaths in forty-six of the largest cities reporting to the Bureau were 59,089 for seven weeks ending October 26. Of these, 36,032 were from influenza and 23,057 from pneumonia.

The highest death rate in the country reported that week was from New Orleans, with Baltimore a close second. St. Paul reported the lowest rate.

Dr. James R. Speight,

Who has for some years been one the city physicians of Norfolk, Va., has been appointed police surgeon in that city to succeed Dr. C. D. J. MacDonald. Dr. MacDonald, who succeeded Dr. Stark A. Sutton, recently resigned.

Dr. William B. Daniel,

Disputanta, was one of the delegates appointed by Governor Davis, to represent Virginia at the tenth annual meeting of the Southern Appalachian Good Roads Association, in Asheville, N. C., November 19-21.

Emergency Hospital Opened at Clifton Forge.

During the influenza epidemic last month, an emergency hospital was opened at Clifton Forge, Va., and in the first twenty-four hours after opening, fifteen patients had been received. Dr. H. S. MacLean, of Grace Hospital, this city, was temporarily in charge.

Dr. and Mrs. F. E. Hamlin

Have returned to Staunton, Va., after visiting their former home in North Carolina.

Dr. E. W. Peery,

Lynchburg, V., was selected as a delegate to represent the Southwest Virginia Synod at the United Lutheran Convention in New York, November 14.

General Gorgas Honored.

Surgeon-General William C. Gorgas, U. S. Army, has been made a grand officer of the Order of the Crown of Italy, in recognition of his services in military sanitation.

Railroads Asked to Cease River Pollution.

The Merchants Association of New York City has addressed a letter to the Hon W. G. McAdoo, Director General of the U. S. Railroad Administration, asking for the abandonment of the unsanitary practice of discharging the contents of toilets from trains upon the road-beds of the railways of the country. This reform has been under discussion at various times but, on account of the difficulties of interstate management and health regulations, no definite progress has been made to protect the public health from this particular danger. Federal control of the railroads should make possible the adoption of a general plan in this direction.

This is a matter which might well receive the attention of health officers at this opportune time. The need of a law to overcome this menace is apparent.

Dr. Frederick J. Kellam,

Of Louisa County, Va., has recently been visiting relatives in this city, while recuperating from an attack of Spanish influenza.

Dr. W. B. Ashburn

And family returned to their home in South Norfolk, Va., the last of October, after an automobile trip through Virginia.

Dr. E. J. Moseley, Jr.,

And family, of this city, have returned from a short visit to friends in King and Queen County, Va.

Dr. W. A. Baker,

Big Stone Gap, Va., was called to Baltimore, last month by the illness of his two daughters, who were in training at the University Hospital, in that city. We regret to note that one of them died.

Dr. and Mrs. Elliott DeJarnette

Have returned to their home in Ashland, Va., after a visit to Blacksburg, Va.

Southern Medical Meeting Postponed.

Like other "best laid plans o' mice and men," the meeting of the Southern Medical Association, scheduled for Asheville, N. C., November 11-14, likewise had to be postponed. Officers of the Society expect to have the greatest meeting in their history, next year, however, to make up for this postponement.

Dr. Susan A. Price,

Recently of Hopewell, Va., is now located at Farmville State Normal School, as resident physician.

Dr. Mary Evelyn Brydon, formerly in this position, is connected with the State Board of Health, with headquarters in this city.

Dr. R. T. McNair

Has returned to his home in Emporia, Va., much improved, after being under treatment in a hospital in this city.

To Improve Conditions.

The City Council of Fredericksburg, Va., has appropriated $5,000 to be used under the supervision of doctors of the U. S. Public Health Service, in improving certain health and sanitary conditions of that city. The work has already been commenced.

Dr. and Mrs. Thomas W. Murrell,

Of Richmond, spent a short time at Old Point Comfort, Va., in October.

Dr. Perkins Glover,

Arvonia, Va., was a visitor in this city, the latter part of October.

Hotels as Hospitals.

The hotels of the French Riviera, once the mecca of the pleasure seekers of the world, are being converted into hospitals for the American wounded.

Dr. T. Brantley Henderson,

Formerly of Henderson, N. C., has moved to this city, and is located in the Professional Building. He will limit his practice to diseases of the Eye, Ear, Nose and Throat.

Dr. Henderson is not a stranger in Richmond, having been a graduate of the Medical College of Virginia, here, in 1906.

Obituary Record.

Dr. Henry W. Dew.

The first member of the Lynchburg, Va., medical profession who gave his life to save others in the influenza epidemic was Dr. Henry W. Dew, his death occurring October 18. Although not physically strong, he worked day and night until forced to give up. Against the advice of his physician and friends, he arose from his sick bed to visit his patients,

relapsed, and pneumonia followed with its grim sequela—death.

Dr. Dew will be a loss to the profession of his city and state. He was a man of ability and attainments, highly educated, a true friend and courteous gentleman. He always stood for the highest ideals in his profession. In all papers read before medical societies, he showed deep thought and research work, making his points clear and full. In participating in discussions of subjects, he possessed an analytical mind, concise and sound judgment.

He was honored by his profession by having been president of the Piedmont Medical and Lynchburg and Campbell County Societies. He was a member of the State Board of Medical Examiners, chairman of the Board of Epileptic Colony. It might well be said of him, "Well done, thou good and faithful servant."

Dr. Dew was fifty-six years of age and a graduate of the College of Physicians and Surgeons, Baltimore, in 1886.

C. E. Busey.

Dr. Edward Virgil Copeland,

Son of Dr. and Mrs. J. E. Copeland, of Round Hill, Va., died at his home in that place, October 15, of pneumonia following influenza. He was born in Rectortown, Va., June 9, 1882, and studied medicine at the Universities of Virginia and Maryland, graduating from the latter school in 1905. He took post-graduate work in London, Paris, Vienna, and more recently in New York. He was one of the physicians of Loudoun County Examining Draft Board and was identified with his local and several other medical societies. In addition to his parents, he is survived by his wife, small son and a sister.

Dr. Copeland was recognized as a physician of ability and was much beloved in the community in which he lived and practised.

Capt. Lawrence Edward Flannagan, M. C.,

A brother of Dr. Roy K. Flannagan, of this city, died at the home of his father-in-law, in Charlottesville, Va., November 6, after an illness of several weeks with influenza and pneumonia. He was a native of Charlottesville, and 54 years of age. Dr. Flannagan received his medical education at the University of Virginia and graduated in 1884. He served as interne at Retreat for the Sick, Richmond, and at Blackwell's Island Hospital, New York, and was also at one time demonstrator in anatomy at the University of Virginia. When taken sick, he had passed all the physical and mental tests at Camp Greenleaf, and had been assigned to overseas duty. He had been sick in the hospital at Camp Greenleaf for a little while before obtaining leave of absence to return to his home.

Mrs. Harnsberger.

The many friends of Dr. Stephen Harnsberger, Catlett, Va., ex-president of the Medical Society of Virginia, will learn with regret of the death of his wife on October 29, and of their only daughter, Mrs. W. B. Weaver, on October 20. Both deaths were due to complications resulting from influenza.

Mrs. Harnsberger had attended several of the medical meetings with her husband, in the past few years, and, by her gentleness and sincerity of manner, had won for herself many friends.

Dr. John Marye Lewis,

A well-known physician of Manassas, Va., died October 14, of pneumonia. He was born in Manassas, thirty-seven years ago, and, after completing his academic education at William and Mary College, studied medicine at the University of Virginia, from which he graduated in 1905. He is survived by a sister and brother.

Dr. Walter Stevenson Slicer,

Roanoke, Va., who only recently joined the medical corps, U. S. Army, died in a camp near New York, October 21. He was born in Montvale, Va., thirty-eight years ago, and studied medicine at the University College of Medicine, Richmond, graduating in 1904. He had for several years been surgeon-in-charge of the Shenandoah Hospital, in Roanoke, and was one of the surgeons of the Norfolk and Western Railway. His wife survives him.

Dr. William Waller Vest,

A prominent physician of Clarksville, Va., died October 25, of pneumonia. He was born in Williamsburg, Va., forty-four years ago, and studied medicine at the Medical College of Virginia, Richmond, from which he graduated in 1901. He is survived by his wife, several children and a large family connection.

Dr. Alfred Leigh,

Of Colvin Run, near Vienna, Va., died October 30. He studied medicine at the Medical College of Virginia, from which school he

received his diploma in 1880 and beacame a member of the Medical Society of Virginia several years later.

Dr. Vernon Liles Andrews,

Mount Gilead, N. C., a graduate of the University College of Medicine, Richmond, Va., in 1909, born December 27, 1884, died at his home, October 13, from Spanish influenza. He was a member of his County, State, the Southern Medical and the American Medical Associations. He had just completed an elegant residence and one of the most modern detached office buildings in that section of the State. He enjoyed a large and lucrative practice and his death was doubtless due to the fact that he continued his work for two days after being stricken with influenza.

Dr. George Christman Rodgers,

A prominent surgeon of Elkins, W. Va., died October 26, aged 46 years. He was a native of Highland County, this State, and studied medicine at the University College of Medicine this city, graduating in 1900.

Dr. Albert T. Chambers,

Baltimore, Md., died October 14, aged forty-two years. He received his academic education at Randolph Macon College, Ashland, Va., after which he studied medicine at the University of Maryland, from which he graduated in 1898. At the time of his death, he was professor of Clinical Surgery in this school.

Dr. U. F. Bass,

A colored physician of Fredericksburg, Va., who volunteered for service, was commissioned a first lieutenant in the medical corps of the Army, and sent overseas last spring, died in France recently as a result of wounds. He was in the firing line, engaged in dressing wounds of soldiers when a shrapnel shell exploded close by, tearing off both his legs. He leaves a wife and four children. Dr. Bass was thirty-eight years of age, a graduate of the Leonard Medical School, in Raleigh, N. C., in 1906, and was highly respected in his home town by white and colored.

Dr. William F. Kabler,

A prominent physician of Bristol, Va.-Tenn., died October 11, following a short illness of pneumonia resulting from influenza. He was thirty-nine years of age and had studied medicine at Lincoln Memorial University, Knoxville, from which he graduated in 1904. His wife and two children survive him.

Dr. Richard Daingerfield Bagnall

Died in Hampton, Va., November 1, and was buried in Norfolk. He was eighty years of age and a graduate of the University of Pennsylvania, School of Medicine in 1860. He was a surgeon in the Confederate army.

Dr. Bee Bartow Halsey,

A native of Orange County, Va., and graduate of the University of Maryland, School of Medicine, in 1885, died of pneumonia, at his home in Winkelman, Ariz., October 19, aged 56 years.

Dr. Leo Smith Petersen,

Of New York City, national president of the Chi Zeta Chi Medical Fraternity, died October 22, of pneumonia following influenza. He was thirty-one years of age and took his medical diploma from Columbia University, College of Physicians and Surgeons, New York, in 1911.

Dr. Thomas S. D. Grasty,

A native of Fredericksburg, Va., but who had been practising in Washington, D. C., since his graduation from George Washington University Medical School, in 1901, died October 18, as a result of influenza. He was thirty years of age and is survived by his parents.

Dr. George O. Quesenberry,

Hinton, W. Va., died October 22, as a result of influenza. His body was carried to Orange, Va., for burial. Dr. Quesenberry, who was a graduate of the College of Physicians and Surgeons, Baltimore, in 1887, was fifty-five years of age. He is survived by his wife and several children.

Dr. William Karp,

Portsmouth, Va., but who was serving in the medical corps of the Army, died at Camp Meade, Md., last month, and his body was brought to his former home for burial. He was a graduate of the Medical College of Virginia, Richmond, in 1915, and was 31 years of age.

Dr. Willis Alston, Jr.,

Littleton, N. C., and his sister, died in a few days of each other last month, of Spanish influenza. He was 39 years of age and a graduate of the University of Maryland, School of Medicine, Baltimore, in 1903.